



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/788,642

02/27/2004

Yefim Sukhman

483018016US1

7240

25096

7590

08/22/2008

PERKINS COIE LLP

PATENT-SEA

P.O. BOX 1247

SEATTLE, WA 98111-1247

EXAMINER

FORDE, DELMA ROSA

ART UNIT

PAPER NUMBER

2828

MAIL DATE

DELIVERY MODE

08/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,642	<b>Applicant(s)</b> SUKHMAN ET AL.	
	<b>Examiner</b> DELMA R. FORDE	<b>Art Unit</b> 2828	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gruzdev et al (2003/0021312) in view of Ekstrand (4,953,176).

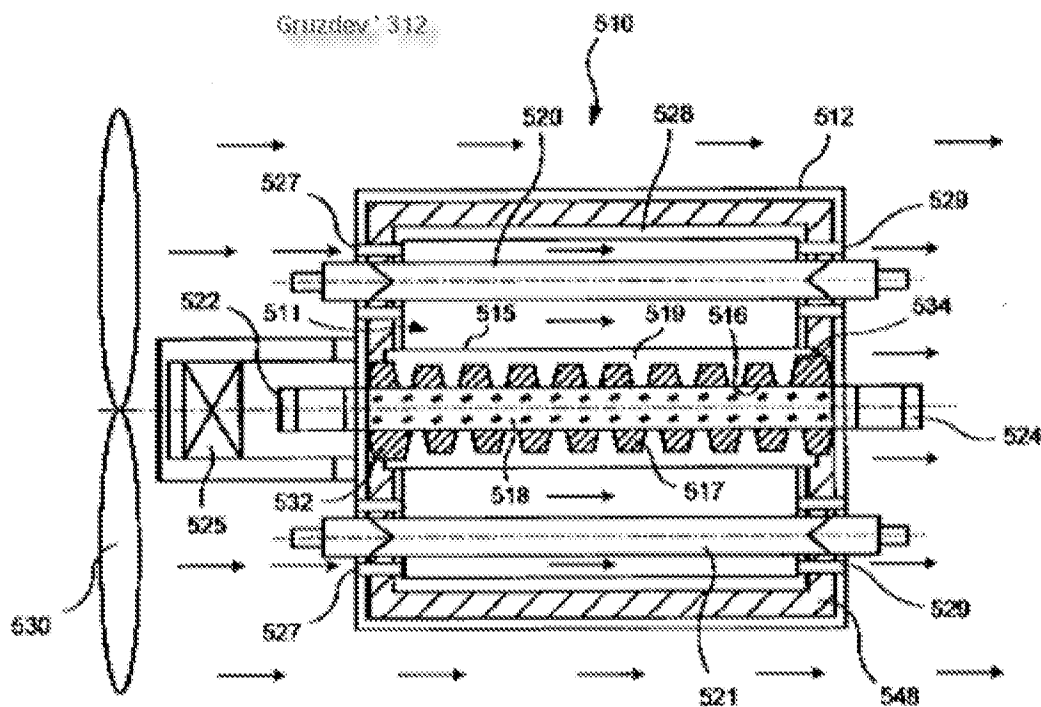
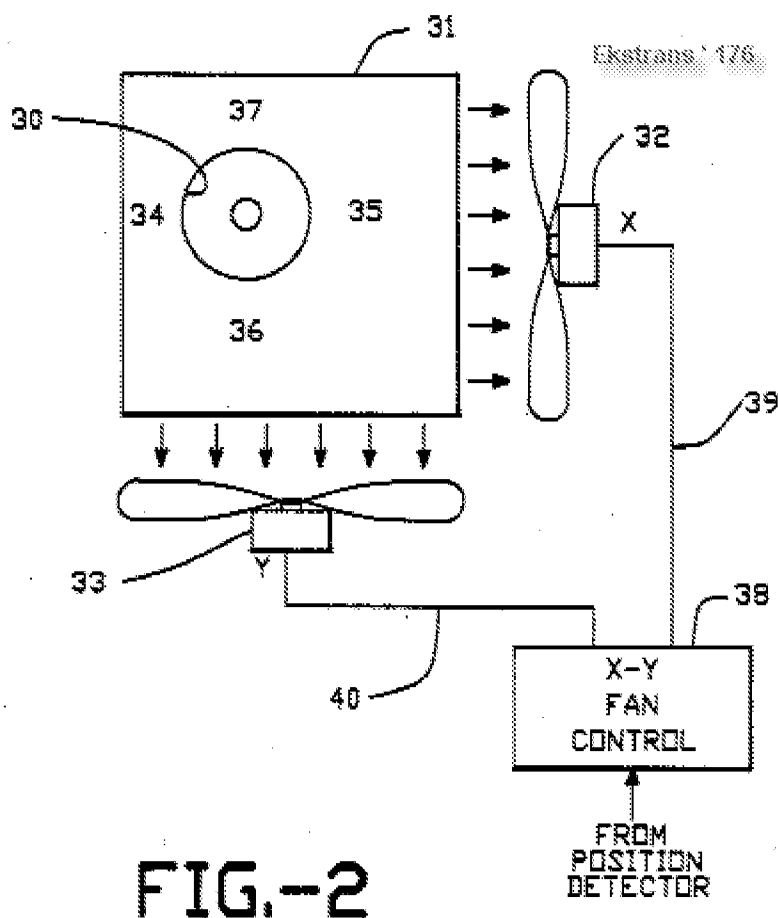


FIG. 5

**Regarding claims 1 and 2,** Gruzdev disclose on Figure 5, a laser which comprises: a laser source (see Figure 5, Character 518, the reference call "laser rod"); a power source (see Fig. 5, Character 525, the reference call "electric motor" and by definition the electric motor has a power supply (electrical energy) to produce mechanical energy) for causing the laser source to generate a laser beam; a fan (see Fig. 5, Character 530) for generating an air flow; wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air; wherein the fan (see Fig. 5, Character 530) directs the air flow adjacent to the developed surface of each of said laser source (see Fig. 5, Character 518) and power source (see Fig. 5, Character 525).

Gruzdev discloses the claimed invention except for the fan directs the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof. Ekstrand teaches providing his device with fan directs the air flow generally parallel with the longitudinal axis. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been

obvious to a person having ordinary skill in the art at the time the invention was to apply the well known fan directs the air flow generally parallel with the longitudinal axis as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were reversed to blow cool air onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly (see Column 3, Lines 4 – 6 and Column 4, Lines 11 -14 of Ekstrand).



**Regarding claim 3,** Gruzdev disclose on Figure 2, surfaces are cooling fins (see

Fig. 2, Character 56 and Paragraph [0012]).

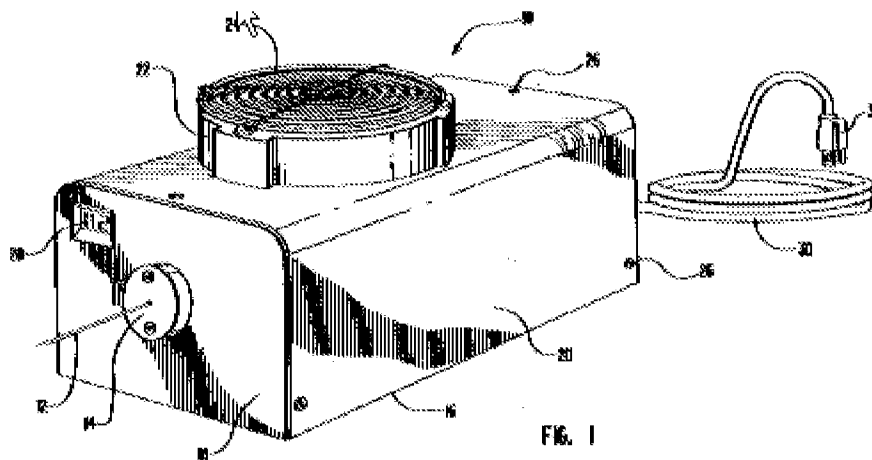
**Regarding claim 4**, Gruzdev disclose on Figure 2, cooling fins on said laser source are profiled in a direction along the longitudinal axis of the laser (see Fig. 2, Character 56 and Paragraph [0012]).

**Regarding claim 5**, Gruzdev disclose on Figure 5, a laser source (see Fig. 5, Character 518) and said power source (see Fig. 5, Character 525) have generally equal cross-sectional areas in a direction perpendicular to the longitudinal axis.

**Regarding claim 8**, Gruzdev discloses the claimed invention except the air flow in a direction to cool said laser source *before* cooling said power source Ekstrand teaches providing his device with the air flow in a direction to cool said laser source *before* cooling said power source. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known the air flow in a direction to cool said laser source *before* cooling said power source as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were reversed to blow cool air onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling

fins would be adjusted accordingly (see Column 3, Lines 4 – 6 and Column 4, Lines 11 - 14 of Ekstrand).

Claims 6, 14 and 22 are rejected under 35 U.S.C. 103(a) as being obvious over Gruzdev et al (2003/0021312) in view of Ekstrand (4,953,176) further in view of Ostler (5,550,853).



**Regarding claims 6, 14 and 22,** Gruzdev in view of Ekstrand disclose the claimed invention except shroud covering. Ostler teaches providing his device with a shroud covering. However, it is well know in the art to apply the shroud covering as discloses by Ostler in see Fig. 1, Character 20. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known shroud covering as suggested by Ostler to the laser of Gruzdev in view of Ekstrand, because could be use to protect the device from atmosphere, dust,

environment, etc. see Figure 1, Character 20, of Ostler.

Claims 7 – 13 and 23 are rejected under 35 U.S.C. 103(a) as being obvious over Gruzdev et al (2003/0021312) in view of Ekstrand (4,953,176) further in view of Ostler (5,550,853).

**Regarding claims 7 and 23,** Gruzdev disclose on Figure 5, a laser which comprises: a laser source (see Fig. 5, Character 518) having a first end, a second end spaced apart from a first end along a longitudinal axis, a laser resonator (see Fig. 5, 522 through 524); a laser media (see Fig. 5, Character 518); a power source (see Fig. 5, Character 525, the reference call “electric motor” and by definition the electric motor has a power supply (electrical energy) to produce mechanical energy) substantially adjacent to one the first or second ends of said laser source (see Fig. 5, Character 518) and adapted for causing the laser source (see Fig. 5, Character 518) to generate a laser beam, wherein the power source (see Fig. 5, Character 525) and the laser source (see Fig. 5, Character 518) are aligned along the longitudinal axis; and cooling fan (see Fig. 5, Character 530) adapted for generating an air flow for cooling said laser source (see Fig. 5, Character 518) and said power source (see Fig. 5, Character 525).

Gruzdev discloses the claimed invention except for the fan directs the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the

exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof. Ekstrand teaches providing his device with fan directs the air flow generally parallel with the longitudinal axis. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known fan directs the air flow generally parallel with the longitudinal axis as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were reversed to blow cool air onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly (see Column 3, Lines 4 – 6 and Column 4, Lines 11 -14 of Ekstrand).

Gruzdev discloses the claimed invention except for electrode. Ostler teaches providing his device with an electrode. However, it is well know in the art to apply the electrode as discloses by Ostler in see Fig. 2 Character 46 and 48. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known electrode as suggested by Ostler to the laser of Gruzdev, because could be use to stimulating the laser see (see Fig. 2, Characters 46, 48, the reference call “cathode and anode”) of Ostler.

**Regarding claim 8,** Gruzdev discloses the claimed invention except the air flow in a direction to cool said laser source *before* cooling said power source Ekstrand teaches providing his device with the air flow in a direction to cool said laser source *before* cooling said power source. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known the air flow in a direction to cool said laser source *before* cooling said power source as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were reversed to blow cool air onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly (see Column 3, Lines 4 – 6 and Column 4, Lines 11 - 14 of Ekstrand).

**Regarding claim 9,** Gruzdev disclose on Figure 5 cooling fan (see Fig. 5, Character 530) generates the air flow in a direction to cool said power source (see Fig. 5, Character 525) before cooling said laser source (see Fig. 5, Character 518).

**Regarding claim 10,** Gruzdev disclose on Figure 5, substantially developed surface to facilitate transfer of heat to air; wherein the fan (see Fig. 5, Character 530) directs the air flow substantially adjacent to the developed surface of each of said laser

source (see Fig. 5, Character 518) and power source (see Fig. 5, Character 525).

**Regarding claim 11**, Gruzdev disclose on Figure 5, surfaces are cooling fins (see Fig. 2, Character 56 and Paragraph [0012]).

**Regarding claim 12**, Gruzdev disclose on Figure 2, cooling fins on said laser source are profiled in a direction along the longitudinal axis of the laser (see Fig. 2, Character 56 and Paragraph [0012]).

**Regarding claim 13**, Gruzdev disclose on Figure 5, a laser source (see Fig. 5, Character 518) and said power source (see Fig. 5, Character 525) have generally equal cross-sectional areas in a direction perpendicular to the longitudinal axis.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 17 – 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Gruzdev et al (2003/0021312).

**Regarding claim 15,** Gruzdev disclose on Figure 5 a laser which comprises: a laser source (see Fig. 5, Character 518); a power source (see Fig. 5, Character 525, the reference call “electric motor” and by definition the electric motor has a power supply (electrical energy) to produce mechanical energy) substantially adjacent said laser source (see Fig. 5, Character 518) and adapted for causing the laser source to generate a laser beam; and a cooling fan (see Fig. 5, Character 530) at one end of the power source (see Fig. 5 Character 525), the cooling fan being adapted for generating an air flow directed in a generally straight line path with said laser source (see Fig. 5, Character 518) and said power source (see Fig. 5, Character 525) for cooling said laser source (see Fig. 5, Character 518) and said power source (see Fig. 5, Character 525).

**Regarding claim 17,** Gruzdev disclose on Figure 5 cooling fan (see Fig. 5, Character 530) generates the air flow in a direction to cool said power source (see Fig. 5, Character 525) before cooling said laser source (see Fig. 5, Character 518).

**Regarding claim 18,** Gruzdev disclose on Figure 5, substantially developed surface to facilitate transfer of heat to air; wherein the fan (see Fig. 5, Character 530) directs the air flow substantially adjacent to the developed surface of each of said laser

source (see Fig. 5, Character 518) and power source (see Fig. 5, Character 525).

**Regarding claim 19**, Gruzdev disclose on Figure 5, surfaces are cooling fins (see Fig. 2, Character 56 and Paragraph [0012]).

**Regarding claim 20**, Gruzdev disclose on Figure 2, cooling fins on said laser source is profiled in a direction along the longitudinal axis of the laser (see Fig. 2, Character 56 and Paragraph [0012]).

**Regarding claim 21**, Gruzdev disclose on Figure 5, a laser source (see Fig. 5, Character 518) and said power source (see Fig. 5, Character 525) have generally equal cross-sectional areas in a direction perpendicular to the longitudinal axis.

### ***Response to Arguments***

Applicant's arguments filed 06/05/2008 have been fully considered but they are not persuasive. Applicant argues the prior art lack on page 9, line 1 – 32 through page 10, lines 1 – 13, the applicant said;

"As discussed and tentatively agreed upon during the June 4<sup>th</sup> telephone conference, the applied references Gruzdev and Ekstrand, either individually or in combination, fail to support a Section 103 rejection claim 1. For example, the Examiner acknowledged that ***Gruzdev does not appear to disclose or suggest a laser source and a power source arranged in an end-to-end series relation along a longitudinal axis such that the fan directs the air flow generally parallel with the longitudinal axis to pass (a) first adjacent to the laser source, and then (b) to pass adjacent to the power source.*** As discussed during the June 4<sup>th</sup> telephone

Art Unit: 2828

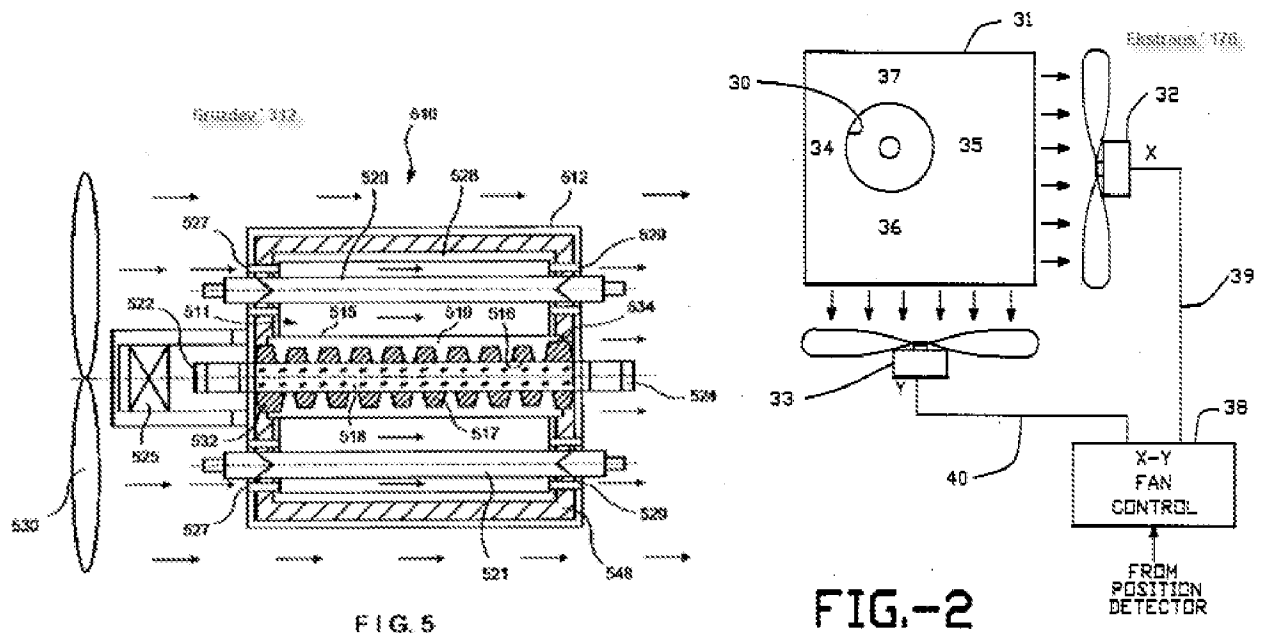
conference, and in contrast with the claimed arrangement, *the fan 530 in the cooling arrangement 510 of Figure 5 of Gruzdev directs air flow first over an electric motor 525 and then through apertures 527 and 529 and out of the cooling arrangement 510. Even assuming for the sake of argument that the electric motor 525 corresponds to the claimed power source (and the applicants expressly do not), the air flow in Gruzdev's system is generally opposite to the air flow in the laser of claim 1.*

Furthermore, as discussed during the June 4<sup>th</sup> telephone conference; *there is no suggestion or motivation to modify the cooling arrangement of Gruzdev to come up with the claimed combination of features. For example, the elaborate cooling arrangement 510 of Gruzdev includes rotatably moving a jacket 519 and spiral groove 517 within the jacket 519 relative to the laser rod 518. A liquid cooling medium is moved through the groove 517 and in the buffer space 548 of the assembly. The electric motor 525 is operable coupled to the jacket 519 to facilitate the rotational movement of the jacket 519 relative to the laser rod 518.* (Gruzdev, [0040]-[0042].) *The applicants respectfully submit that it would require a significant reconfiguration of Gruzdev's device to come up with claimed power source in "end-to-end series relation along a longitudinal axis" with the laser source and the fan. The Office Action has not provided how such a modification could be achieved, or that such a modification would provide any benefit to Gruzdev's hand-held laser device. Furthermore, such a reconfiguration is inapposite to the specific and elaborate cooling arrangements disclosed in Gruzdev.*

Moreover, as discussed during the June 4th telephone conference, *the electric motor 525 is not a "power source for causing the laser source to generate a laser beam," as recited in claim 1.* As outlined above, the motor 525 is merely an electric motor having a magnetic clutch that is configured to "generate rotational motion of the jacket 519 including the internal spiral groove 517 relative to the laser rod 518." (Gruzdev, [0040].) The motor 525 is not in any way associated with causing the laser source to generate a laser beam.

*Ekstrand fails to cure the above-noted deficiencies of Gruzdev to support a Section 103 rejection of claim 1.* For example, as discussed during the June 4<sup>th</sup> telephone conference, *Ekstrand specifically teaches one or more fans (e.g., fans 32 and 33 of Figure 2 of Ekstrand) configured to direct air flow perpendicular to a longitudinal axis of the laser. Nowhere does Ekstrand disclose or suggest that the fans are positioned to direct the air flow generally parallel with the longitudinal axis of the laser, as recited in claim 1.*

The examiner disagrees with the applicant's argument that Gruzdev does not appear to disclose or suggest a laser source and a power source arranged in an end-to-end series relation along a longitudinal axis such that the fan directs the air flow generally parallel with the longitudinal axis to pass (a) first adjacent to the laser source, and then (b) to pass adjacent to the power source.



Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. Gruzdev in combination with Ekstrand on Figure 2 teaches fan directs the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof. It is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was to apply the well known fan directs the air flow generally parallel with the longitudinal axis as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were reversed to blow cool air onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly. When the direction of the fan is inverted, this could produce that the air flows, the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof as stated in the rejection above.

The examiner disagrees with the applicant's argument, since the prior art does teach or suggest the power source. Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. A power source of Gruzdev discloses could be use as a power source of the device as stated in the rejection above. Gruzdev gives to an example in the paragraph [0040] that power supply could be used for rotate the jacket 519 and internal spiral groove 517 around the laser rod 518 that does not mean that supply of device can be used like power, that recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to

Art Unit: 2828

patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, and then it meets the claim.

Applicant argues the prior art lack on page 10, lines 23 – 33 through page 11, lines 1 – 7 the applicant said;

**“Claims 6, 14, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Gruzdev, Ekstrand, and Ostler*. *Claim 6 depends from allowable base claim 1, claim 14 depends from allowable base claim 7, and claim 22 depends from allowable base claim 15. As discussed above, Gruzdev and Ekstrand, either alone or in combination, fail to disclose or suggest all the features of claim 1. Ostler is relied on in the Office Action for disclosing a device with a shroud covering. (Office Action, p. 7.) Even assuming for the sake of argument that this is correct (and the applicants expressly do not), Ostler fails to cure the above-noted deficiencies of Gruzdev and Ekstrand, and therefore fails to support a Section 103 rejection of claim 1. As discussed below, the combination of Gruzdev, Ekstrand, and Ostler further fails to support a Section 103 rejection of base claims 7 and 15.* Accordingly, dependent claims 6, 14, and 22 are allowable over the combination of Gruzdev, Ekstrand, and Ostler for at least the reason that these references, either alone or in combination, fail to disclose or suggest all the features of base claims 1, 7, and 15, and the additional features of dependent claim 6, 14, and 22. Therefore, the Section 103 rejection of claims 6, 14, and 22 should be withdrawn.”**

The examiner disagrees with the applicant's argument that Gruzdev and Ekstrand, either alone or in combination, fail to disclose or suggest all the features of claim 1. Ostler is relied on in the Office Action for disclosing a device with a shroud covering. (Office Action, p. 7.) Even assuming for the sake of argument that this is correct (and the applicants expressly do not), Ostler fails to cure the above-noted deficiencies of Gruzdev and Ekstrand, and therefore fails to support a Section 103 rejection of claim 1. Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each has an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source

(see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. Gruzdev in combination with Ekstrand on Figure 2 teaches fan directs the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known fan directs the air flow generally parallel with the longitudinal axis as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were reversed to blow cool air onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly. When the direction of the fan is invested, this could produce that the air flows, the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof as stated in the rejection above.

Art Unit: 2828

Applicant argues the prior art lack on page 11, lines 11 – 33 through page 12, lines 1 – 23, the applicant said;

"Independent claim 7 is directed to a laser having a laser source with a first end, a second end spaced apart from the first end along a longitudinal axis, a laser resonator, a laser media, and electrodes for exciting the laser media. The laser further includes a power source at least proximate to one of the first or second ends of the laser source such that the power source and the laser source are aligned along the longitudinal axis. The power source is adapted for causing the laser source to generate a laser beam from the other one of the first or second ends. The laser of claim 7 further includes a cooling fan positioned adjacent to the power source and located in a generally straight line path with the laser source and the power source along the longitudinal axis.

As discussed during the June 4th telephone conference, *claim 7 is patentable over Gruzdev, Ekstrand, and Ostler under Section 103 because these references, either alone or in combination, fail to disclose or suggest a cooling fan positioned adjacent to the power source and located in a generally straight line path with the laser source and the power source along the longitudinal axis. In contrast to the claimed arrangement, Gruzdev's fan 530 is spaced apart from the outer casing 512 of Gruzdev's device and is positioned outboard of the electric motor 525. As discussed above, the electric motor 525 is not a "a power source at least proximate to one of the first or second ends of said laser source and adapted for causing the laser source to generate a laser beam from the other one of the first or second ends," as recited in claim 7. Rather, as mentioned previously, the motor 525 is merely an electric motor configured to rotate the jacket 519 and internal spiral groove 517 around the laser rod 518 of Gruzdev's device.* Ekstrand and Ostler fail to cure the above-noted deficiencies to Gruzdev. For example, as discussed previously, Ekstrand specifically discloses one or more fans configured to direct air flow perpendicular to a longitudinal axis of the laser. Ostler is relied on in the Office Action for disclosing an electrode. (Office Action, p. 9.) The Office Action further asserts that it would have been obvious to "apply the well known electrode as suggested by Ostler to the laser of Gruzdev, because [it] could be used to simulate [] the laser." (Office Action, p. 9.) The applicants respectfully submit that such a modification of Gruzdev's device is impracticable. For example, Gruzdev is directed to a hand-held laser device. In contrast, the electrodes of Ostler's stationary laser device are large, relatively heavy structures. A person skilled in the art would not be motivated to modify Gruzdev's compact, hand-held laser device with the large electrodes of Ostler. Because the applied references Gruzdev, Ekstrand, and Ostler, either alone or in combination, fail to disclose or suggest all the claimed features, the Section 103 rejection of claim 7 should be withdrawn."

The examiner disagrees with the applicant's argument, since the prior art does teach or suggest a cooling fan positioned adjacent to the power source and located in a generally straight line path with the laser source and the power source along the longitudinal axis. Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5,

Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. A power source of Gruzdev discloses could be use as a power source of the device as stated in the rejection above. Gruzdev gives to an example in the paragraph [0040] that power supply could be used for rotate the jacket 519 and internal spiral groove 517 around the laser rod 518 that does not mean that supply of device can be used like power, that recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, and then it meets the claim.

Applicant argues the prior art lack on page 12, lines 24 – 33 trough page 13, lines 1 – 27, the applicant said;

“Independent claim 15, as amended, is directed to a laser comprising a laser source and a power source at least proximate to the laser source. The power source is adapted for causing the laser source to generate a laser beam. The laser also includes a cooling fan at one end of the power source. The cooling fan is adapted for generating an air flow directed in a generally straight line path with the laser source and the power source for cooling the laser and power sources.

Claim 15 is patentable over Gruzdev under **Section 102 because this reference fails to disclose or suggest a cooling fan at one end of the power source that generates an air flow directed in a generally straight line path with the laser source and the power source.** In contrast with the laser of claim 15, *Gruzdev's fan 530 is spaced apart from the outer casing 512 of Gruzdev's device and is positioned outboard of the electric motor 525. As discussed above, the electric motor 525 is not a power source "at least proximate to said laser source and adapted for causing the laser source to generate a laser beam," as recited in claim 15. Rather, as mentioned above, the motor 525 is merely an electric motor configured to rotate the jacket 519*

Art Unit: 2828

*and internal spiral groove 517 around the laser rod 518 of Gruzdev's device. Gruzdev accordingly fails to disclose or suggest the claimed cooling fan at one end of the power source that generates an airflow directed in a generally straight line path with the laser source and the power source. Because Gruzdev fails to disclose or suggest all the claimed features, the Section 102 rejection of claim 15 should be withdrawn.*

Claim 15 is further patentable over Gruzdev under Section 103 because there is no suggestion or motivation to modify Gruzdev come up with the claimed combination of features. As discussed above with respect to claim 1, such modifications are not suitable in light of the teachings of Gruzdev.”

The examiner disagrees with the applicant's argument, since the prior art does teach or suggest a cooling fan positioned adjacent to the **power source** and located in a generally straight line path with the laser source and the power source along the longitudinal axis. Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. A power source of Gruzdev discloses could be use as a power source of the device as stated in the rejection above. Gruzdev gives to an example in the paragraph [0040] that power supply could be used for rotate the jacket 519 and internal spiral groove 517 around the laser rod 518 that does not mean that supply of device can be used like power, that recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, and then it meets the claim.

Applicant argues the prior art lack on page 13, lines 30 – 33 through page 14, lines 1 – 10, the applicant said;

“The applicants note that the Office Action does not specifically reject independent claim 23. Although the Office Action Summary indicates that claim 23 stands rejected, the Detailed Action omits any explanation of how any of the applied reference(s) anticipate or render obvious this claim. The applicants respectfully submit that this omission amounts to a failure to articulate a *prima facie* case of unpatentability and the burden to rebut this "rejection" has not yet shifted to the applicants.

Consequently, a next Office action rejecting claim 23 cannot properly be made final since only then would the applicants be obligated to rebut the rejection, presuming that such an Office Action sets forth a *prima facie* case. (See MPEP § 706.07(a)).

Independent claim 23 includes several features generally similar to those of claim 7. Accordingly, claim 23 is patentable over the applied references for at least the reasons discussed above with reference to claim 7, and for the additional features of this independent claim.”

The examiner disagrees with the applicant's argument, since in the telephone interview the examiner explained to the applicant, the office action has a typographic error, because the examiner not including claim 23 in the rejection of claim 7 as it had. Examiner add claim 23 on this Office Action.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5,

Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. Gruzdev in combination with Ekstrand teaches fan directs the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known fan directs the air flow generally parallel with the longitudinal axis as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were **reversed to blow cool air** onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly. When the direction of the fan is invested, this could produce that the air flows, the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof as stated in the rejection above.

The examiner disagrees with the applicant's argument, since the prior art does teach or suggest a cooling fan positioned adjacent to the power source and located in a generally straight line path with the laser source and the power source along the longitudinal axis. Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. A power source of Gruzdev discloses could be use as a power source of the device as stated in the rejection above. Gruzdev gives to an example in the paragraph [0040] that power supply could be used for rotate the jacket 519 and internal spiral groove 517 around the laser rod 518 that does not mean that supply of device can be used like power, that recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, and then it meets the claim.

In response to applicant's argument that Ekstrand is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed

invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Gruzdev clearly on Figure 5 discloses the laser source (see Fig. 5, Character 518) and the power source (see Fig. 5, Character 525) each have an exterior surface; and wherein the laser source (see Fig. 5, Character 518) and the power source (see Fig. Character 525) are arranged in an end-to-end series relation along a longitudinal axis (see Fig. 5) developed surface to facilitate transfer of heat to air. Gruzdev in combination with Ekstrand teaches fan directs the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the power source for subsequent cooling thereof. However, it is well known in the art to apply the fan directs the air flow generally parallel with the longitudinal axis as discloses by Ekstrand in Column 3, Lines 4 – 6 and Column 4, Lines 11 -14. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to apply the well known fan directs the air flow generally parallel with the longitudinal axis as suggested by Ekstrand to the laser of Gruzdev, because could be used to cooling medium and if the fan directions were **reversed to blow cool air** onto the cooling fins, rather than to draw cool air across them and then the symmetry of cooling fins would be adjusted accordingly. When the direction of the fan is invested, this could produce that the air flows, the air flow generally parallel with the longitudinal axis to pass first substantially adjacent to the exterior surface of the laser source for the cooling thereof, and then to pass substantially adjacent to the exterior surface of the

power source for subsequent cooling thereof as stated in the rejection above.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DELMA R. FORDE whose telephone number is (571)272-1940. The examiner can normally be reached on M-T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun O. Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DELMA R. FORDE/  
Examiner, Art Unit 2828

/Minsun Harvey/  
Supervisory Patent Examiner, Art Unit 2828